Check List 8(4): 642–661, 2012
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ISSN 1809-127X (available at *www.checklist.org.br*)

Check List
Journal of species lists and distribution

LISTS OF SPECIES

Magnoliophyta, Biosphere Reserve of Pendjari, Atacora Province, Benin

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ABSTRACT: The Biosphere Reserve of Pendjari is an example of best management practice of protected areas in West Africa with typical Sudanian savanna vegetation. It is part of the vast and transboundary protected areas of W, Pendjari and Arly National Parks of Benin, Burkina Faso and Niger. This work provides an overview of the flora of the reserve by means of a thorough botanical inventory. The plant species composition is typical of Sudanian savanna. We recorded 684 plant species, which were distributed among 366 genera and 89 families. The two most species-rich families were Fabaceae (115) and Poaceae (112). The most important life forms were phanerophytes and therophytes. The chorological spectrum was dominated by Sudanian species. With *Ipomoea beninensis* Akoègninou, Lisowski and Sinsin, *Thunbergia atacorensis* Akoègninou and Lisowski and *Cissus kouandeensis* A.Chev., three endemic species of Benin were recorded, demonstrating the importance of the reserve for plant conservation.

INTRODUCTION

Protected areas are the cornerstone of global conservation strategies (Clerici *et al.* 2007). They constitute a unique laboratory for research on the functioning and the complexity of ecosystems, as nature reserves preserve the essential of the biodiversity (Sinsin 1993). Up to now however, informations on the flora of West African protected areas are scarce.

The Biosphere Reserve of Pendjari is part of the vast and transboundary protected areas of the WAP complex, including the Pendjari, Arly and W National Parks of Benin, Burkina Faso and Niger. It is one exemple of best management practice of protected areas in West Africa with high floristic potential (Tiomoko 2007; Vodouhê *et al.* 2010).

Many studies were conducted in the Biosphere Reserve of Pendjari on its wildlife resources (Sinsin *et al.* 2002; Nago *et al.* 2006; Kassa *et al.* 2007; Djossa *et al.* 2008a) and its management (IUCN 2002). Most investigations on the flora have been partial, only considering a portion of the ecosystems and very few have been published (Djossa *et al*. 2008b; 2011; Déléké Koko *et al.* 2011; Houéhanou *et al.* 2011). However, any effective and sustainable management of the vegetation requires a good knowledge of the flora.

The present paper is an overview of the floristic diversity of the Biosphere Reserve of Pendjari based on a thorough botanical survey of the major plant formations, relevant collections and previous publications.

MATERIALS AND METHODS

Study site

The Biosphere Reserve of Pendjari (BRP) is located in the extreme Northwest of Benin Republic (Figure 1) in the Sudanian region (White 1983; Adomou *et al.* 2006) between the latitudes 10°30' and 11°30' N and the longitudes 00°50' and 2°00' E. From game reserve in 1954, the BRP has been upgraded to Biosphere Reserve in 1986. It is part of the W-Arly-Pendjari (WAP) national parks, a transfrontier network of reserves between the republics of Niger, Burkina-Faso, and Benin. The BRP covers an area of 4,661.4 km^2 and consists of two important components: the National Park of Pendjari or core zone (2,660.4 km^2) and the hunting zones (hunting zone of Pendjari: 1,750 km^2 and hunting zone of Konkombri: 251 km^2). The core zone is a strictly protected area where the vegetation is less disturbed; only ecotourism is allowed. The core zone and the hunting zone are surrounded by a buffer zone named control occupation zone, a zone where human activities are under control. Soils are ferruginous with generally very flat topography and the altitude range is 150-200 m above sea level. The vegetation of the BRP is a mosaic of savannas, woodlands, dry forests, and riparian forest along rivers (Figure 4). The Pendjari River is the only important one that carries water along the reserve (Delvingt *et al*. 1989). It is bordered by the most important riparian gallery forest in the northern part of the reserve (Figure 4A).

Data collection

The list of species was established from floristic surveys conducted from 2006 to 2010. Data were supplemented by specimen data from the National Herbarium of Benin (Benin) and the data bases of the Laboratory of Applied Ecology of the University of Abomey-Calavi (Benin).

The vegetation and soil maps of the Biosphere Reserve of Pendjari (Willaine and Volkoff 1967; König 2005) were used as the basis for site selection covering all vegetation types. At each site, we selected representative and homogeneous sample stands, following the variations in dominant species. 2-3 floristic inventories were performed following Braun Blanquet's approach (Braun-

Blanquet 1932). Species were identified using Hutchinson and Dalziel (1954-1972), Akoègninou *et al*. (2006) and Lisowski (2009) as well as the National Herbarium of Benin. Voucher specimens were provided for most species.

Data analysis

Life forms and chorological types were assigned on the basis of the life forms defined by Raunkiaer (1905) and the phytochoria defined by White (1983). Spectra were established through the calculation of the relative frequency of each species' life form and chorotype using the number of species.

The floristic similarity between the complete BRP, the hunting zone, core zone and control occupation zone was assessed using Jaccard's Index (Ij). The comparison with Arly National Park, partial faunal reserve of Pama in Burkina Faso and W National Park in Benin are based on the publications of Ouédraogo *et al*. (2011), Mbayngone *et al.* (2008) and Arbonnier *et al.* (2002).

Results and Discussion

A total of 684 plant species distributed over 366 genera and 89 families was recorded (Table 2). With this figure, the Biosphere Reserve of Pendjari (BRP) conserves 24% of the national flora (Akoègninou *et al*. 2006).

The National Park of Pendjari (that is the core zone) presented 397 plant species (58% of the reserve's flora) belonging to 234 genera (64% of the reserve's genera) and 82 families (92% of the reserve's families). The northern part of the core zone contains the two most important forest ecosystems of the reserve: the dense dry forest of Bondjagou (16% of the BRP species) and the gallery forest along the Pendjari River (Figure 4A). The presence of these two ecosystems should mark a significant difference between the floristic composition of the core zone and the hunting zone. However, the stream network emerging from the Pendjari River creates some less dense gallery patterns allowing the establishment of dry and riparian forest species in the hunting zone. Thus, 477 species (70% of the reserve's flora) belonging to 275 genera (75% of the reserve's genera) and 87 plant families (98% of the reserve's families) are inventoried in the hunting zone. It is the most representative component of the Biosphere Reserve of the Pendjari with 80% of core zone species (Ij = 79%) and 77% of control occupation zone species (Ij = 76%) (Table 3). The control occupation zone is a mosaïque of field and fallows along the edge of the hunting zone. This narrow band (control occupation zone) assimilated to land use area is inhabited by 373 species (55% of the reserve's flora), 196 genera (54% of the reserve's genera) and 75 families (84% of the reserve's families). The families and genera recorded in the BRP are less diversified (Table 1). The two most important families of the Biosphere Reserve of Pendjari are Fabaceae (115 species), and Poaceae (112 species). Similar to the reserve, the two most species-rich families of core zone, hunting zone and control occupation zone are Fabaceae and Poaceae. The genera *Combretum* (14 species), *Crotalaria* (14) and *Indigofera* (14 species) are found to be the three most species-rich genera of the BRP. However, *Crotalaria* is replaced by *Acacia* within the

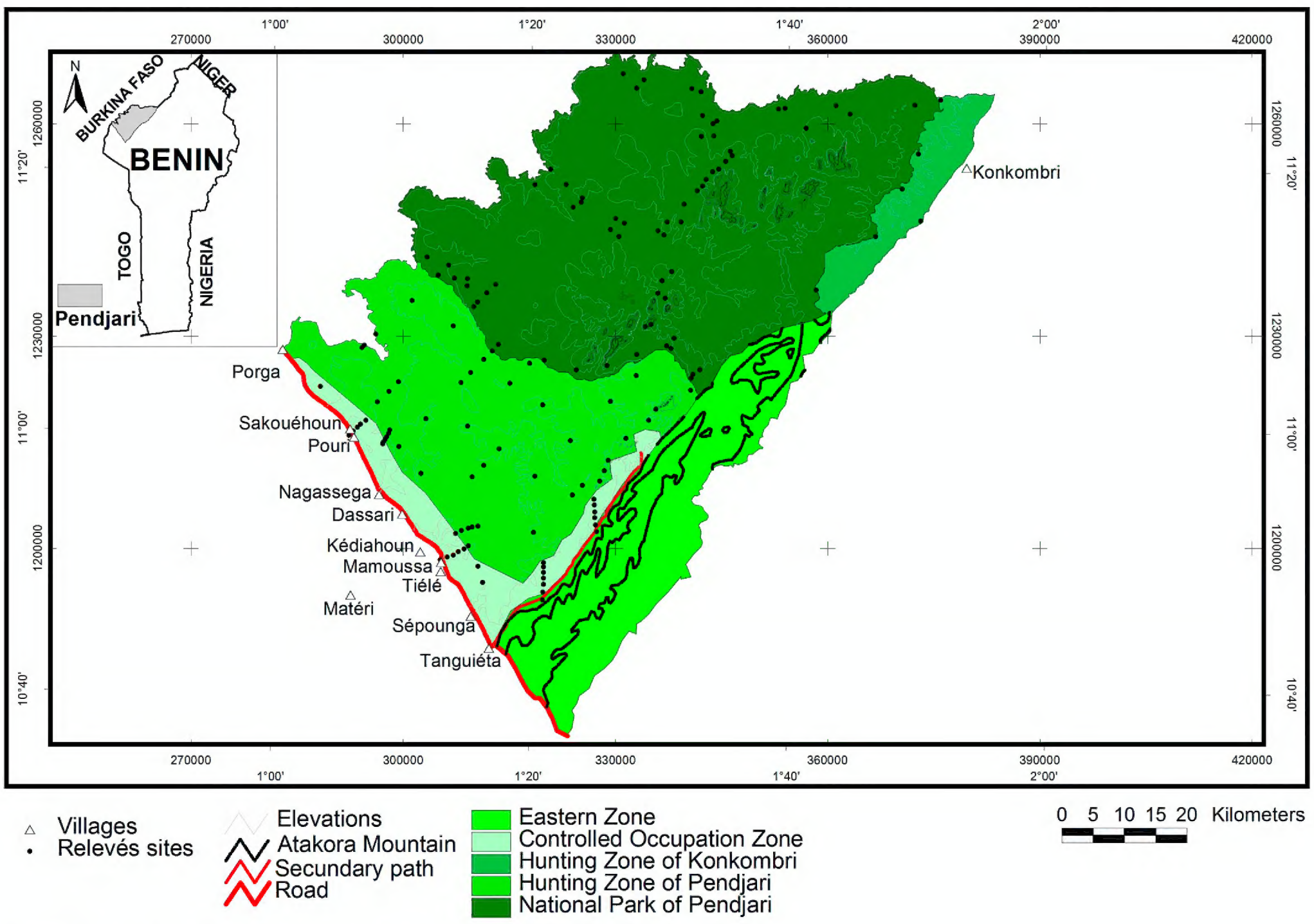

Figure 1. Map of Biosphere Reserve of Pendjari.

reserve components (core zone, hunting zone and control occupation zone) (Table 2).

The common species of the Biosphere Reserve of Pendjari include *Terminalia avicennioides, Terminalia macroptera, Terminalia laxiflora, Combretum collinum, Combretum glutinosum, Vitellaria paradoxa, Andropogon gayanus, Pseudocedrela kotschyi, Detarium microcarpum, Burkea africana* and *Crossopteryx febrifuga*. Plant species such as *Aneilema beninense*, *Protea madiensis*, *Saba comorensis*, *Scadoxus multiflorus* and *Uraria picta* are rare in the Biosphere Reserve of Pendjari. *Borassus aethiopum* is confined to the northern part of the core zone while *Protea madiensis* is solely recorded in the hunting zone. BRP provides habitat for *Ipomoea beninensis* (Figure 5B), *Thunbergia atacorensis* (Figure 5A) and *Cissus kouandeensis* (Akoegninou and Lisowski 2004), the endemic plant species from Benin. Some plant species are featured in Figures 5-8.

Table 1. The most species-rich families and genera of the Biosphere Reserve of Pendjari.
Cntr.occ.zone = Control occupation zone

RESERVE		CORE ZONE		HUNTING ZONE		CNTR. OCC. ZONE	
FAMILY							
Fabaceae	115	Fabaceae	67	Fabaceae	77	Poaceae	64
Poaceae	112	Poaceae	50	Poaceae	75	Fabaceae	63
Asteraceae	46	Rubiaceae	23	Rubiaceae	25	Rubiaceae	20
Malvaceae	32	Combretaceae	21	Combretaceae	20	Combretaceae	17
GENUS							
Combretum	14	*Combretum*	14	*Combretum*	13	*Indigofera*	12
Crotalaria	14	*Acacia*	10	*Indigofera*	12	*Combretum*	10
Indigofera	14	*Indigofera*	9	*Acacia*	10	*Acacia*	8

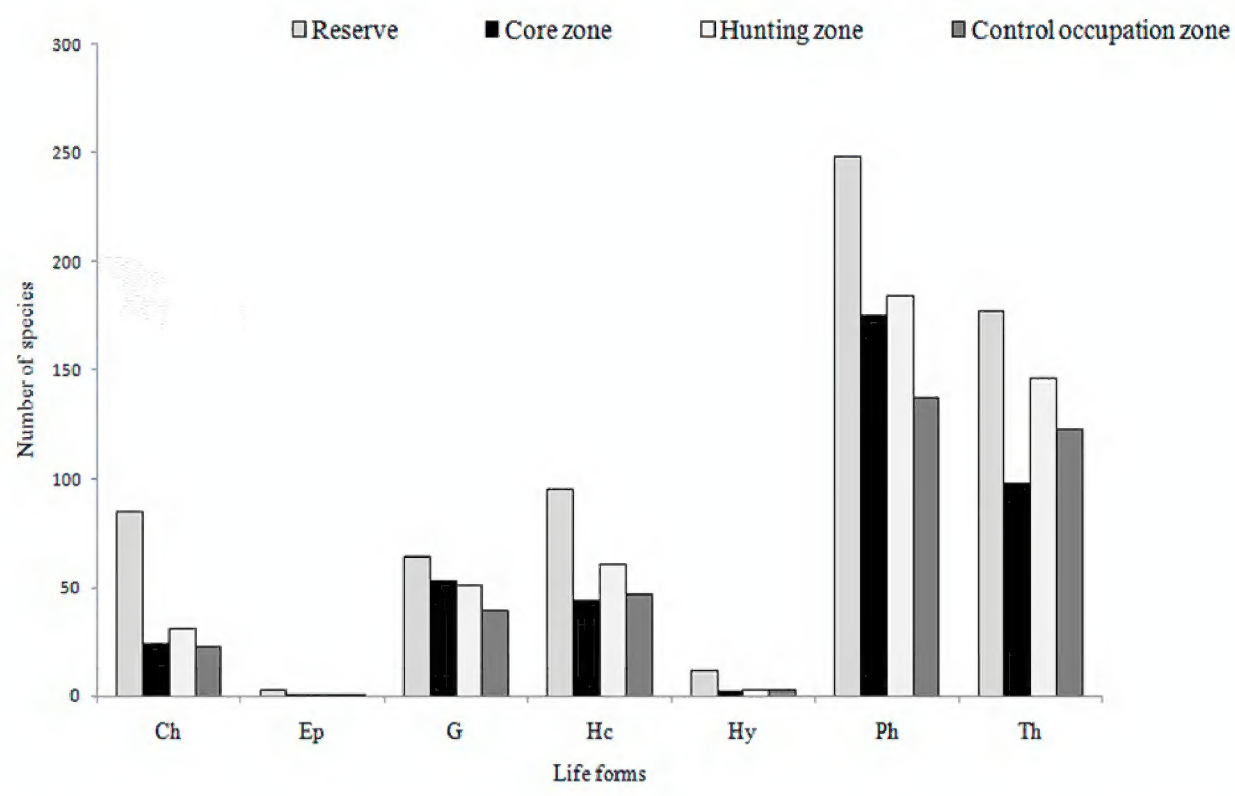

Figure 2. Life-form spectrum of the flora. Ph: Phanerophyte, Th: Therophyte, Hc: Hemicryptophyte, Ch: Chamaephyte, G: Geophyte and Ep: Epiphyte.

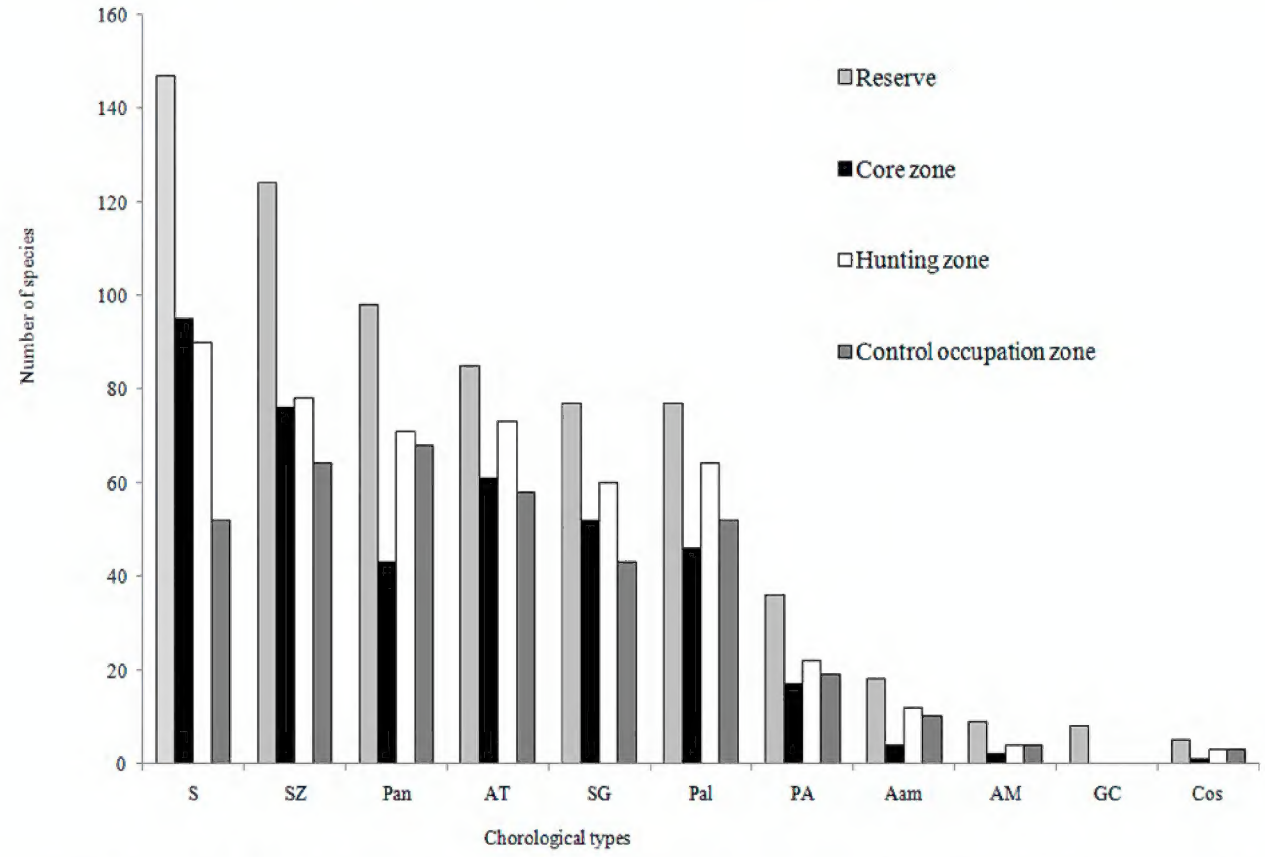

Figure 3. Chorological spectrum of the flora. S: Sudanian, SZ: Sudano-Zambezian, SG: Sudano/Guinean transition, AT: Tropical Africa, Pal: Paleotropical, Pan: Pantropical, PA: Pluri-regional African, Aam: Afro-american, GC: Guineo-Congolian, Cos: Cosmopolitan.

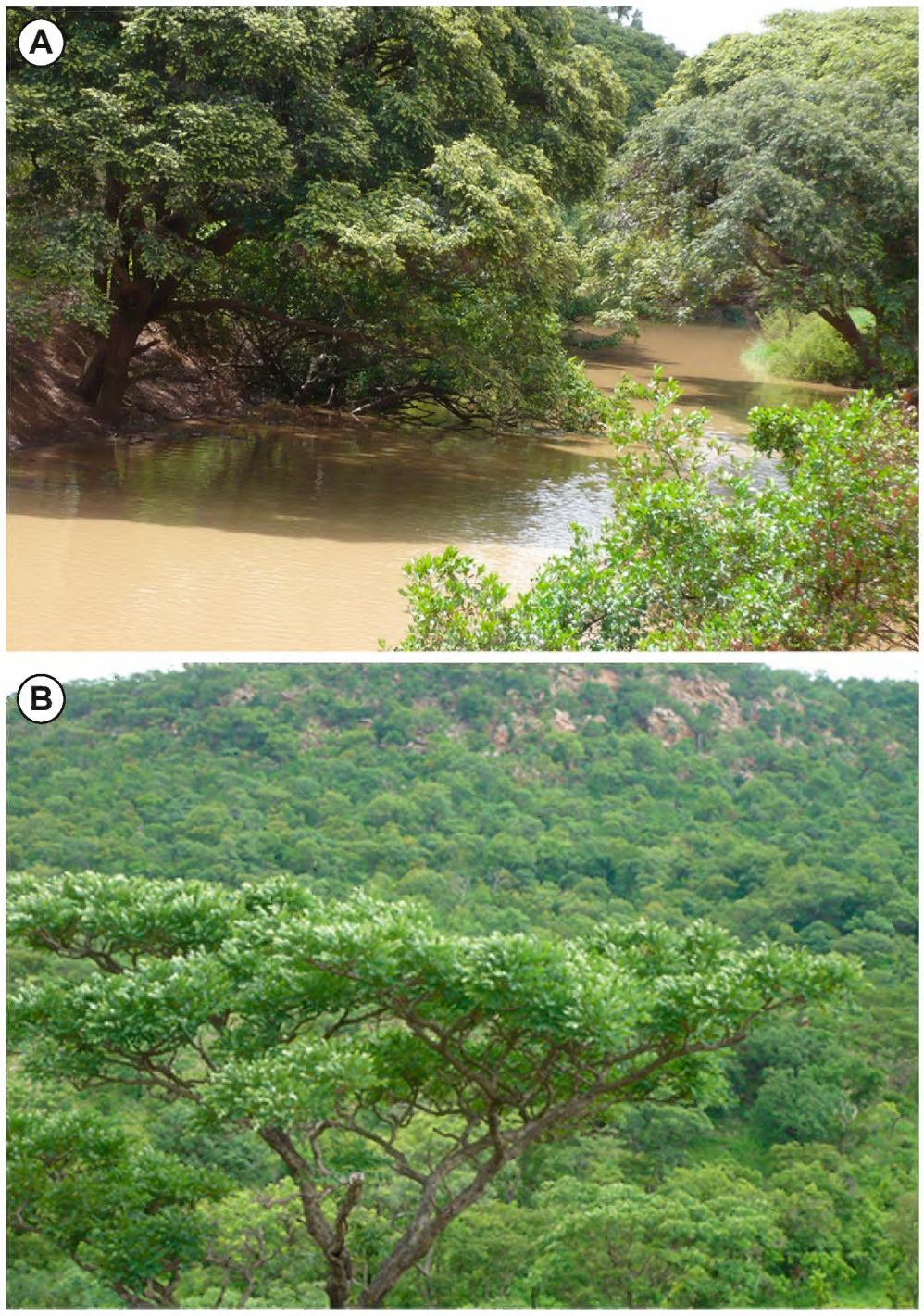

Figure 4. Panoramic view of Biosphere Reserve of Pendjari. A) Forest gallery in northern part of the BRP; B) Savanna ecosystems in core zone of the BRP.

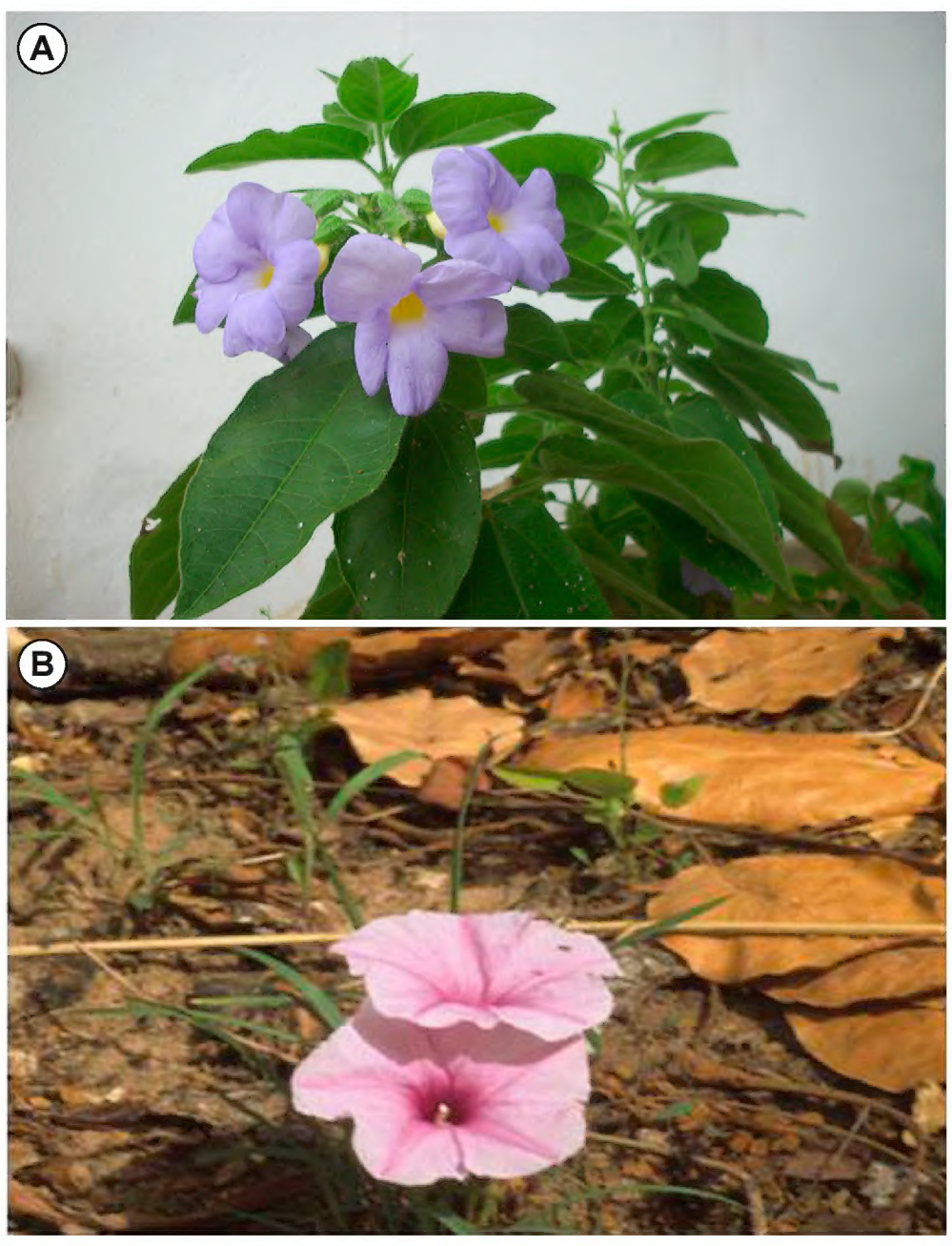

Figure 5. Endemic species of Benin. A) *Thunbergia atacorensis*; B) *Ipomoea beninensis*.

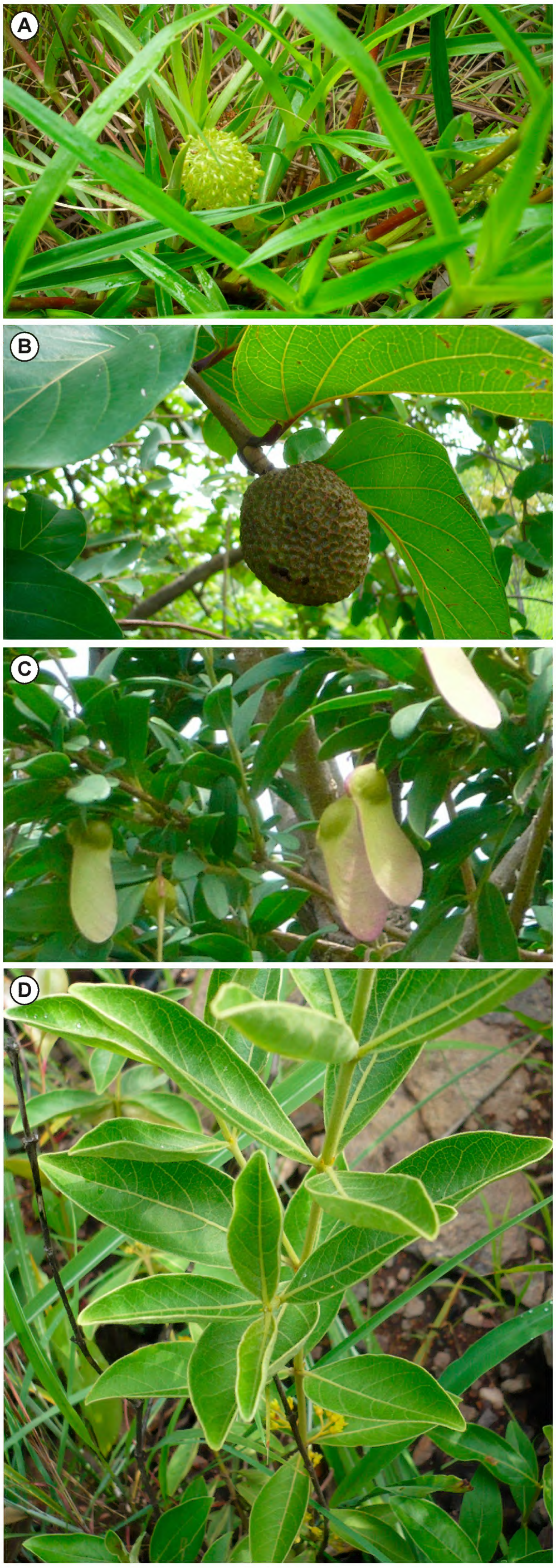

Figure 6. Common species to the core zone, hunting zone and control occupation zone of the Biosphere Reserve of Pendjari. A) *Aneilema lanceolatum*; B) *Mitragyna inermis*; C) *Securidaca longipedunculata*; D) *Fadogia agrestis*.

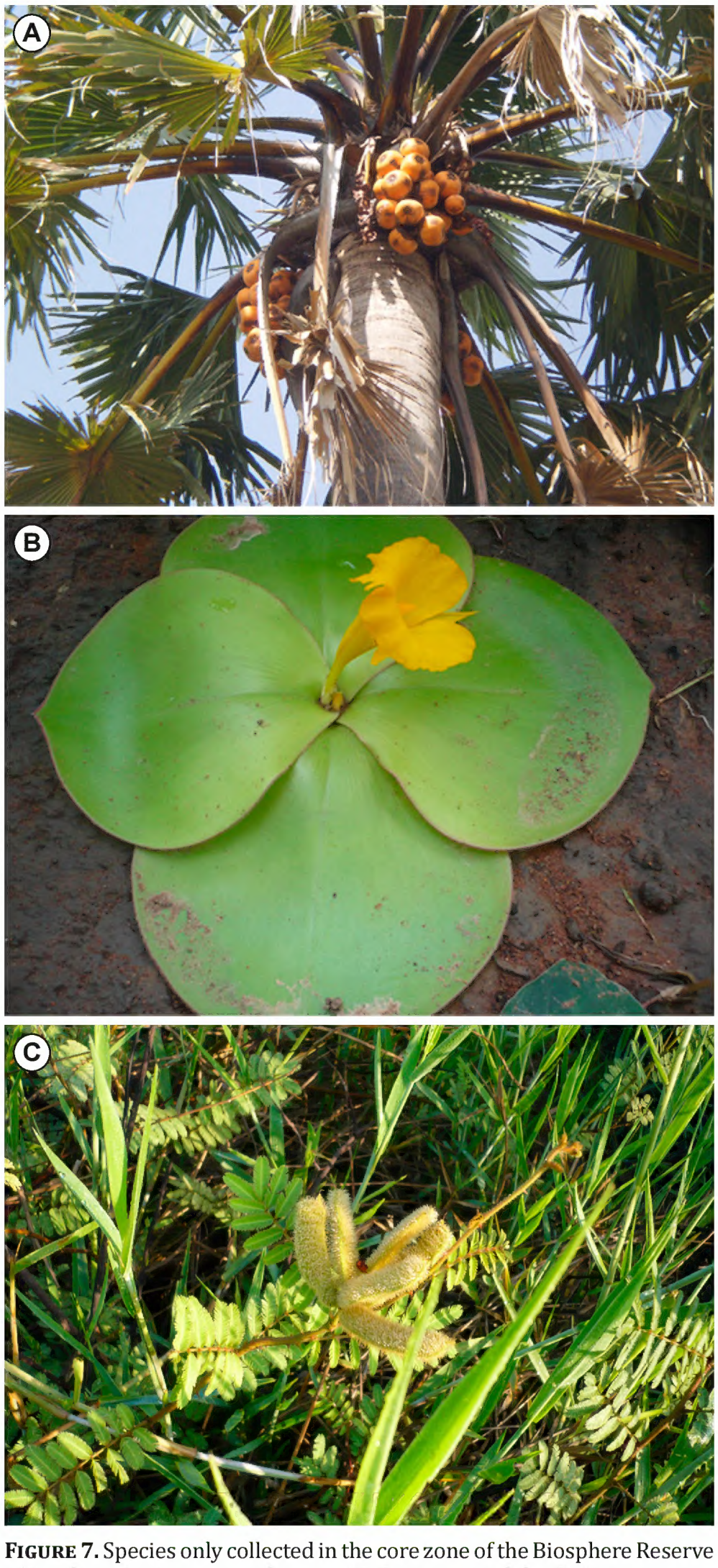

FIGURE 7. Species only collected in the core zone of the Biosphere Reserve of Pendjari. A) *Borassus aethiopum*; B) *Costus spectabilis*; C) *Mimosa pigra*.

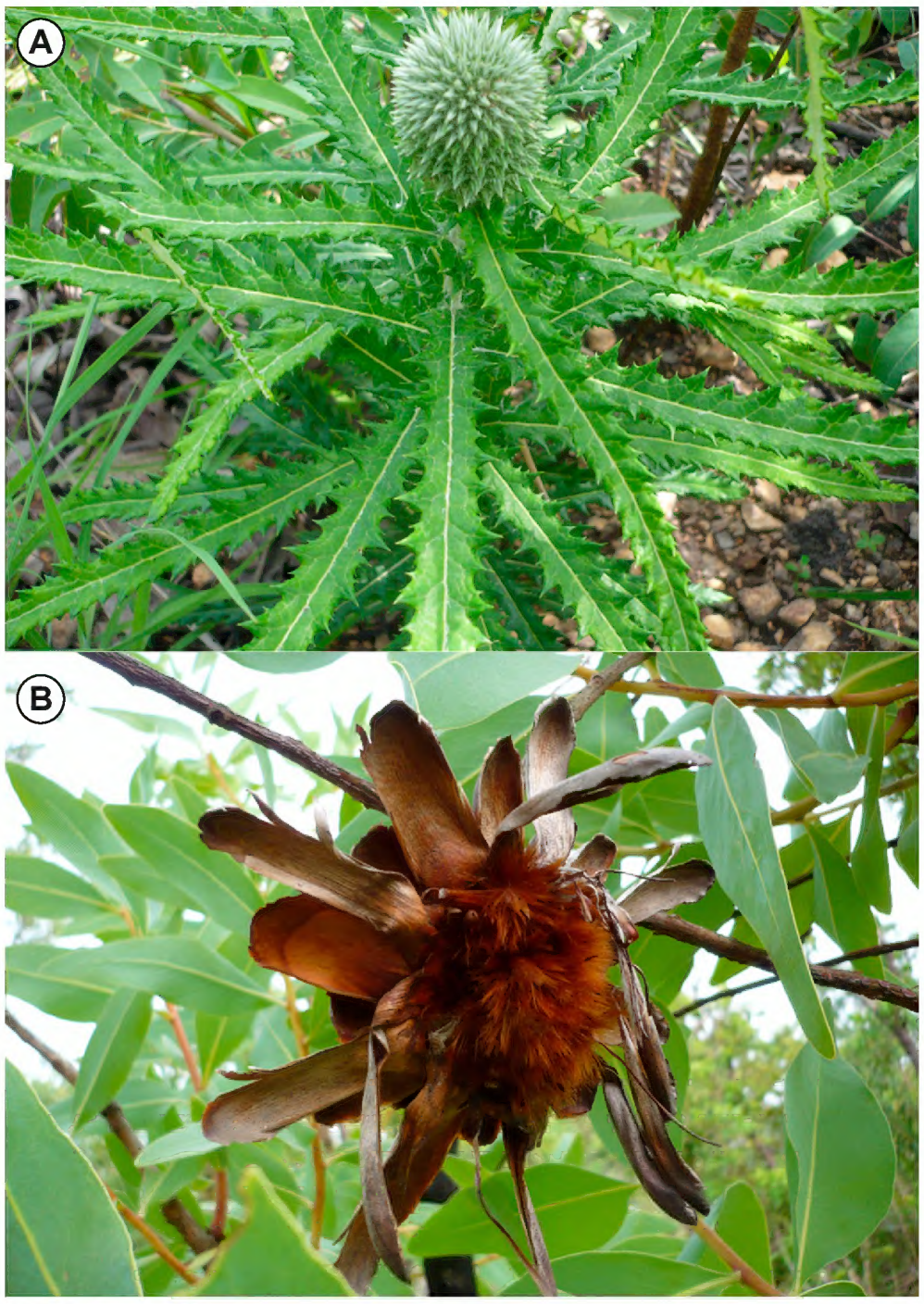

FIGURE 8. Species only collected in the hunting zone of the Biosphere Reserve of Pendjari. A) *Echinops longifolius*; B) *Protea madiensis*.

The comparison of the three zones of the reserve (core zone, hunting zone and control occupation zone) revealed a high similarity in term of life forms and chorological types. The life form composition (Figure 2) is dominated by phanerophytes in the BRP (36%) as well as CZ (44%), HZ (38%) and COZ (37%). Similar results were found by Wala (2004) in the nearby Atakora mountains in northern Benin, Schmidt (2006) in Burkina Faso, Mbayngone *et al.* (2008) in the partial faunal reserve of Pama and Ouédraogo *et al.* (2011) in Arly National Park. The pattern observed seems to be characteristic of the North Sudanian Zone (Hahn-Hadjali *et al.* 2006). Despite the prevalence of savannah ecosystems (Figure 4B), there is a higher share of phanerophytes in both the core and hunting zones due to the presence of gallery and dry forests. The abundance of phanerophytes in the COZ is essentially due to the presence of fallows and the regrowth from stumps left during vegetation clearing. The promotion of traditional agroforestry practices as a natural resource management strategy in the BRP (Vodouhê *et al.* 2011) mitigated anthropogenic effects in the COZ. Chorological spectra (Figure 3) are characterized by a predominance of Sudanian species (Sudanian and Sudano-Zambesian) except for the COZ where anthropogenic activities promoted widespread species.

The Atakora mountain chain, in the east of the Biosphere Reserve of Pendjari (PAG2 2005) is a key element which marked the difference between the floristic composition of the Biosphere reserve of Pendjari and nearby reserves (Arly National Park, partial faunal reserve of Pama in Burkina Faso Faso and W National Park in Benin). In absence of Atakora mountain species, similarity (even if low) is found between the Biosphere Reserve of Pendjari and Arly National Park (Ij = 54.3%), the Biosphere reserve of Pendjari and the partial faunal reserve of Pama (Ij = 51%). 79% of BRP families and 61% of BRP genera are recorded in Arly National Park while 44% of BRP families and 55% of BRP genera are recorded in the partial faunal reserve of Pama. Considering the Atakora mountain species, there is little similarity between the Biosphere Reserve of Pendjari and Arly National Parks in the one hand (Ij = 38%), the Biosphere Reserve of Pendjari and the partial faunal reserve of Pama in the other (Ij= 33.4%). This is mainly related to the important role of the Atacora mountains in the preservation of particular ecosystems

(Wala 2004). That area has high topodiversity. Although part of the sudanian zone (White 1986), the Atakora mountains have a high share of Guinean species: 9.3% of the Atakora mountain flora belongs to the Guineo-Congolian zone (Wala 2004).

As compared to the flora of the nearby W National Park (Arbonnier *et al.* 2002), there are 25% more species in the Biosphere Reserve of Pendjari. This is probably due to the higher habitat diversity along the Atakora mountains and by this way, higher plant diversity. The Atakora mountains belong to the more species-rich southern domain of the Sudanian zone (Wala 2004).

Table 2. Magnoliophyta of the Biosphere Reserve of Pendjari with their binomial, life-form (LF) and family. (life-forms: mPh: mesophanerophyte [8-30 m], mph: microphanerophyte [2-8 m], nph: nanophanerophyte [0.5-2 m], Ch: chamaephyte, Hc: Hemicryptophyte, Th: Therophyte, G: Geophyte [Gb: with bulb, Gr: with rhizome and Gt: with tuber], L: Liana and Ep: Epiphyte).

SCIENTIFIC NAME	LIFE FORM	VOUCHER SPECIMENS
Acanthaceae		
Asystasia gangetica (L.) T.Anderson	Th	Houngnon 3583
Blepharis linariifolia Pers.	Th	Houngnon 4142
Blepharis maderaspatensis (L.) Heyne ex Roth	Ch	Houngnon 6394
Dyschoriste perrottetii (Nees) Kuntze	nph	Akoègninou 6171
Hygrophila micrantha (Nees) T.Anderson	Th	Sinsin 2599
Hygrophila pobeguinii Benoist	Th	Yédomon. 136
Hypoestes cancellata Nees	nph	Akoègninou 5661
Hypoestes verticillaris (L.f.) Sol. ex Roem. and Schult.	Ch	Sinsin 2382
Justicia insularis T.Anderson	Ch	Pauwels 8210
Lepidagathis anobrya Nees	Th	
Lepidagathis collina (Endl.) Milne-Redh.	Th	Houngnon 7396
Monechma ciliatum (Jacq.) Milne-Redh.	Th	Assédé 30
Monechma depauperatum (T.Anderson) C.B.Clarke	Ch	Assédé 87
Nelsonia canescens (Lam.) Spreng.	LHc	Sinsin 2393
Phaulopsis barteri T.Anderson	Ch	Sinsin 2368
Phaulopsis imbricata (Forssk.) Sweet	Ch	
Thunbergia atacorensis Akoègninou and Lisowski	Lnph	Lisowski 990
Aizoaceae		
Trianthema portulacastrum L.	Th	
Alismataceae		
Burnatia enneandra Micheli	Gt	Sinsin 3614
Amaranthaceae		
Achyranthes aspera L. var. *aspera*	Th	Assédé 80
Amaranthus spinosus L.	Th	
Celosia trigyna L.	LTh	Houngnon 4114
Gomphrena celosioides Mart.	Th	
Pandiaka angustifolia (Vahl) Hepper	Th	Sinsin 3657
Pandiaka involucrata (Moq.) Hook.f.	Ch	Assédé 70
Pupalia lappacea (L.) Juss.	Ch	Assédé 27
Amaryllidaceae		
Crinum distichum Herb.	Gb	Sinsin 3616a
Crinum zeylanicum (L.) L.	Gb	Burg 1428
Pancratium tenuifolium Hochst. ex A.Rich.	Gb	
Scadoxus multiflorus (Martyn) Raf.	Gb	Assédé 22
Anacardiaceae		
Haematostaphis barteri Hook.f.	mph	Akoègninou 6160
Lannea acida A.Rich. [sensu lato]	mPh	Sinsin 2375
Lannea barteri (Oliv.) Engl.	mph	
Lannea microcarpa Engl. and K.Krause	mPh	Assede 13
Lannea velutina A.Rich.	mPh	Assede 5
Ozoroa insignis Delile	mph	Sokpon 256
Ozoroa pulcherrima (Schweinf.) R. and A.Fernandes	mph	Sokpon 1575
Rhus natalensis Bernh. ex Krauss	mph	Sokpon 1260
Sclerocarya birrea (A.Rich.) Hochst.	mPh	Houngnon 7722
Spondias mombin L.	mPh	
Xylopia parviflora (A.Rich.) Benth.	mPh	Assédé 31
Annonaceae		
Annona senegalensis Pers. ssp. *senegalensis*	nph	Essou 1996

Table 2. ***Continued.***

SCIENTIFIC NAME	LIFE FORM	VOUCHER SPECIMENS
Hexalobus monopetalus (A.Rich.) Engl. and Diels	mph	Burg 1477
Uvaria chamae P.Beauv.	Lmph	Essou 2043
Anthericaceae		
Chlorophytum affine Baker	Gt	Sinsin 3641
Chlorophytum blepharophyllum Schweinf. ex Baker	Gr	Assédé 41
Chlorophytum gallabatense Schweinf. ex Baker	Gt	Sinsin 3663
Chlorophytum geophilum Peter ex Poelln.	Gt	Sinsin 3636
Chlorophytum macrophyllum (A.Rich.) Aschers.	Hc	Sinsin 2919
Chlorophytum pusillum Schweinf. ex Baker	Gr	Chevalier 24108
Chlorophytum stenopetalum Baker	Gr	
Apiaceae		
Steganotaenia araliacea Hochst.	mph	Akoègninou 6167
Apocynaceae		
Ancylobotrys amoena Hua	Lmph	Akoègninou 2421
Calotropis procera (Aiton) W.T.Aiton	mPh	Sinsin 591
Cryptolepis oblongifolia (Meisn.) Schltr.	Ch	Sinsin 3163
Holarrhena floribunda (G.Don) Durand and Schinz	mPh	Akoègninou 4876
Oxystelma bornouense R.Br.	Lnph	Assédé 75
Periploca nigrescens Afzel.	Lmph	
Raphionacme brownii Scott-Elliot	Gt	Sinsin 2713
Raphionacme excisa Schltr.	Gt	Sinsin 2721
Saba comorensis (Boj.) Pichon	Lmph	Maesen 6914
Strophanthus hispidus DC.	Lmph	
Strophanthus sarmentosus DC.	Lmph	Assédé 78
Tacazzea apiculata Oliv.	Lmph	Essou 911
Tylophora sylvatica Decne.	Lnph	Essou 1603
Araceae		
Amorphophallus abyssinicus (A.Rich.) N.E.Br.	Gt	Assédé 69
Amorphophallus dracontioides (Engl.) N.E.Br.	Gt	
Stylochaeton hypogaeus Lepr.	Gt	Assédé 6
Stylochaeton lancifolius Kotschy and Peyr.	Gt	Sinsin 1995
Arecaceae		
Borassus aethiopum Mart.	mPh	Houngnon 3546
Hyphaene thebaica (L.) Mart.	mPh	
Raphia sudanica A.Chev.	mPh	Houngnon 4437
Asparagaceae		
Asparagus africanus Lam.	Ch	Assédé 8
Asteraceae		
Acanthospermum hispidum DC.	Th	Kreis 14
Adenostemma caffrum DC.	Th	Houngnon 1374
Ageratum conyzoides L.	Th	Sokpon 297
Aspilia angustifolia Oliv. and Hiern	Th	Lisowski D-988
Aspilia bussei O.Hoffm. and Muschl.	Th	Sinsin 859
Aspilia ciliata (Schumach.) Wild	Th	Lisowski D-897
Aspilia helianthoides (Schumach. and Thonn.) Oliv. and Diern	Ch	
Aspilia kotschyi (Sch. Bip) Oliv. var. *kotschyi*	Th	Assédé 95
Aspilia rudis Oliv. and Hiern ssp. *rudis*	Ch	Lisowski D-934
Bidens bipinnata L.	Th	Houinato 627
Bidens biternata (Lour.) Merr. and Sherff	Th	Sokpon 278
Bidens borianiana (Sch.Bip. ex Schweinf. and Asch.) Cuf.	Th	Veeschkens s.n.
Blumea adamsii J.-P.Lebrun and Stork	Ch	Sokpon 513
Blumea axillaris (Lam.) DC.	Th	Sinsin 1573
Blumea crispata (Vahl) Merxm. and Roessler var. *crispata*	Ch	Lisowski D-922
Blumea laciniata (Roxb.) DC.	Th	Sinsin 884
Blumea oloptera DC.	Ch	Sinsin 1661
Chrysanthellum indicum DC.	Th	
Cosmos sulphureus Cav.	Th	Houngnon 1396a
Crassocephalum togoense C.D.Adams	Th	Sinsin 1128

Table 2. ***Continued.***

SCIENTIFIC NAME	LIFE FORM	VOUCHER SPECIMENS
Dicoma sessiliflora Harv.	Hc	De Souza 354d
Echinops longifolius A.Rich.	Gr	Lisowski 0-933
Eclipta prostrata (L.) L.	Th	Sinsin 689
Elephantopus mollis Kunth	Th	
Emilia abyssinica (Sch.Bip. ex A.Rich.) C.Jeffrey	Th	Lisowski 0-916
Herderia truncata Cass.	Th	De Souza 378c
Kleinia abyssinica (A.Rich.) A.Berger	Th	Sinsin 3668
Launaea nudicaulis (L.) Hook.f.	Ch	Houngnon 1471a
Melanthera elliptica O.Hoffm.	Hc	Houngnon 6672
Melanthera scandens (Schumach. and Thonn.) Roberty	Hc	
Pentanema indicum (L.) Ling	Th	Zon 334
Pulicaria crispa (Forssk.) Oliv.	Th	Akoègninou 2564
Synedrella nodiflora (L.) Gaertn.	Th	Assédé 98
Tridax procumbens L.	Th	
Vernonia ambigua Kotschy and Peyr.	Th	Lisowski D-1003
Vernonia camporum A.Chev.	nph	Houngnon 4709
Vernonia cinerea (L.) Less.	Th	
Vernonia colorata (Willd.) Drake	nph	De Souza 398a
Vernonia galamensis (Cass.) Less.	Th	Akoègninou 2549
Vernonia glaberrima Welw. ex O.Hoffm.	nph	Houngnon 399b
Vernonia migeodii S.Moore	nph	Pauwels 8174
Vernonia nestor S.Moore	nph	Essou 2328
Vernonia nigritiana Oliv. and Hiern	Hc	Houngnon 6191
Vernonia perrottetii Sch.Bip. ex Walp.	Th	Houngnon 404c
Vernonia pumila Kotschy and Peyr.	Hc	Lisowski D-958
Vernonia purpurea Sch.Bip. ex Walp.	Hc	Sokpon 404
Bignoniaceae		
Kigelia africana (Lam.) Benth.	mPh	Maesen 6475
Stereospermum kunthianum Cham.	mPh	Akoègninou 4543
Boraginaceae		
Coldenia procumbens L.	Th	Sinsin 2553
Heliotropium indicum L.	Th	Houngnon 7711
Heliotropium strigosum Willd.	Th	Sinsin 3605
Burseraceae		
Commiphora pedunculata (Kotschy and Peyr.) Engl.	nph	Houngnon 209a
Capparaceae		
Boscia angustifolia A.Rich.	mph	
Cadaba farinosa Forssk.	Lmph	Houngnon 3913
Capparis sepiaria L. var. *fischeri* (Pax) De Wolf	mph	Houngnon 3888
Capparis tomentosa Lam.	mph	Houngnon 215c2
Cleome gynandra L.	Th	Sokpon 1520
Cleome viscosa L.	Th	
Crateva adansonii DC. ssp. *adansonii*	mph	Sinsin 861
Maerua angolensis DC.	mph	Houngnon 5062
Maerua oblongifolia (Forssk.) A.Rich.	mph	Sinsin 3626b
Caryophyllaceae		
Polycarpaea corymbosa (L.) Lam. [sensu lato]	Th	Essou 2290.
Polycarpaea eriantha Hochst. ex A.Rich.	Th	Pauwels 8207
Polycarpaea linearifolia (DC.) DC.	Th	Houngnon 7397
Celastraceae		
Gymnosporia senegalensis (Lam.) Loes.	mph	Houngnon 7699
Celtidaceae		
Celtis toka (Forssk.) Hepper and J.R.I.Wood	mPh	Houngnon 1824a
Ceratophyllaceae		
Ceratophyllum demersum L.	Hy	Assédé 96
Chrysobalanaceae		
Neocarya macrophylla (Sabine) Prance ex F.White	mph	Assédé 45
Parinari curatellifolia Planch. ex Benth.	mph	Sinsin 2473

Table 2. ***Continued.***

SCIENTIFIC NAME	LIFE FORM	VOUCHER SPECIMENS
Clusiaceae		
Garcinia livingstonei T.Anderson	mPh	Assédé 35
Cochlospermaceae		
Cochlospermum planchonii Hook.f.	Gr	Sokpon 298
Cochlospermum tinctorium A.Rich.	Gr	Sinsin 2082
Colchicaceae		
Gloriosa superba L.	LGt	Pauwels 7835
Iphigenia ledermannii Engl. and K.Krause	Gt	Sinsin 3622
Combretaceae		
Anogeissus leiocarpa (DC.) Guill. and Perr.	mPh	Lejoly 96/640
Combretum aculeatum Vent.	Lnph	Houngnon 305
Combretum acutum Lawson	mph	Sinsin 2606
Combretum adenogonium Steud. ex A.Rich.	mPh	Sinsin 2363
Combretum collinum Fresen.	mph	Essou 2008
Combretum glutinosum Perr. ex DC.	mph	Sinsin 2583
Combretum indicum (L.) DeFilipps	LmPh	Houngnon 5065
Combretum lecardii Engl. and Diels	Lnph	Assédé 11
Combretum micranthum G.Don	mph	Sokpon 264
Combretum molle R.Br. ex G.Don	mph	Pauwels 8226
Combretum nigricans Lepr.ex Guill. and Perr. var. *elliotii* (Engl. and Diels) Aubrév.	mph	Sinsin 3669
Combretum nioroense Aubrév. ex Keay	mph	Assédé 19
Combretum paniculatum Vent.	LmPh	Sinsin 593
Combretum sericeum G.Don	nph	Burg 1484
Combretum tomentosum G.Don	LmPh	Assédé 14
Guiera senegalensis J.F.Gmel.	nph	Sinsin 2560
Pteleopsis suberosa Engl. and Diels	mph	Maesen 7000
Terminalia avicennioides Guill. and Perr.	mph	Essou 2010
Terminalia glaucescens Planch. ex Benth.	mPh	Sinsin 3423
Terminalia laxiflora Engl.	mPh	Essou 2007
Terminalia macroptera Guill. and Perr.	mPh	Essou 2111
Terminalia mollis M.A.Lawson	mph	Sinsin 3639
Commelinaceae		
Aneilema beniniense (P.Beauv.) Kunth	Gr	Adjakidjè 2983
Aneilema lanceolatum Benth. ssp. *lanceolatum*	Gr	Houngnon 7758
Aneilema umbrosum (Vahl) Kunth	Hc	Sinsin 3693
Commelina africana L.	Gr	Sokpon 734
Commelina aspera Bent.	Th	Sokpon 206
Commelina benghalensis L.	Hc	Kreis 101
Commelina diffusa Burm.f.	Hc	Maesen 7445
Commelina erecta L.	Th	Akoègninou 2522
Commelina nigritana Benth.	Hc	Houngnon 7538
Cyanotis lanata Benth.	Ch	Morton A4514
Cyanotis longifolia Benth. var. *longifolia*	Hc	Pauwels 8160
Floscopa glomerata (Willd. ex Schult and Schult.f.) Hassk. ssp. *lelyi* (Hutch.) Brenan	Ch	Lejoly and Barbier
Connaraceae		
Rourea coccinea (Thonn. ex Schumach.) Benth.	LCh	Assédé 57
Convolvulaceae		
Evolvulus alsinoides (L.) L.	Ch	Adjakidjè 1725
Ipomoea argentaurata Hallier f.	Gr	Pauwels 7929
Ipomoea beninensis Akoègninou, Lisowski and Sinsin	LGr	Sinsin 2462
Ipomoea blepharophylla Hallier f.	Gr	Sinsin 493
Ipomoea eriocarpa R.Br.	nph	Sinsin 864
Ipomoea fulvicaulis (Choisy) Hallier f.	LCh	Chevalier 24138
Ipomoea heterotricha F.Didr.	Th	Sinsin 883
Ipomoea involucrata P.Beauv.	Hc	
Ipomoea mauritiana Jacq.	Lmph	Sopkon 328
Merremia aegyptia (L.) Urban	LTh	
Merremia dissecta (Jacq.) Hallier f.	LHc	Adjakidjè 2448

Table 2. ***Continued.***

SCIENTIFIC NAME	LIFE FORM	VOUCHER SPECIMENS
Merremia kentrocaulos (C.B. Clarke) Rendle	Lnph	Maesen 6923
Merremia pterygocaulos (Steud. ex Choisy) Hallier f.	LHc	Houngnon 440a
Cucurbitaceae		
Cucumis maderaspatanus L.	Th	Akoègninou 2799
Trochomeria macrocarpa (Sond.) Hook.f.	Gt	Assédé 88
Cyperaceae		
Afrotrilepis pilosa (Boeck.) J.Raynal	Hc	
Bulbostylis hispidula (Vahl) R.W.Haines	Hc	Assédé 48
Cyperus cuspidatus Kunth	Th	
Cyperus cyperoides (L.) Kuntze s.l.	Gb	Assédé 16
Cyperus difformis L.	Th	Pauwels 8201
Cyperus esculentus L.	Hc	Assédé 73
Cyperus haspan L.	Th	
Cyperus iria L.	Th	Assédé 104
Cyperus latifolius Poir.	Hc	Sinsin 3615
Cyperus rotundus L.	Gt	Assédé 91
Cyperus tenuiculmis Boeck. s.l.	Hc	
Fimbristylis dichotoma (L.) Vahl	Hc	Assédé 39
Fimbristylis ferruginea L.	Hc	Assédé 29
Fimbristylis littoralis L.	Hc	Assédé 17
Fuirena stricta Steud.	Hc	Sinsin 3207
Fuirena umbellata Rottb.	Gr	Sinsin 516, 1489
Kyllinga bulbosa Beauv.	Gt	Assédé 9
Kyllinga odorata Vahl	Gr	Sinsin 3607
Kyllinga pumila Michx.	Th	Akoègninou 4577
Mariscus longibracteatus Cherm.	Gt	Assédé 20
Oxycaryum cubense (Poepp. and Kunth) Lye	Hc	Sinsin 1638
Rhynchospora corymbosa (L.) Britt.	Hc	Assédé 103
Scleria achtenii De Wild.	Gr	Sinsin 3154
Dioscoreaceae		
Dioscorea abyssinica Hochst. ex Kunth	Gt	De Souza 614b
Dioscorea bulbifera L.	Gt	Sokpon 271
Dioscorea cayenensis Lam.	Gt	Sokpon 235
Dioscorea dumetorum (Kunth) Pax	Gt	Essou 2175
Dioscorea lecardii De Wild.	Gb	Pauwels 8139
Dioscorea praehensilis Benth.	Gb	Chevalier 24148
Dioscorea quartiniana A.Rich.	Gt	Essou 2792
Dioscorea sansibarensis Pax	Gt	Houngnon 623a
Dipterocarpaceae		
Monotes kerstingii Gilg	mph	Sinsin 3127
Droseraceae		
Drosera indica L.	Th	Assédé 105
Ebenaceae		
Acalypha ciliata Forssk.	Th	Houngnon 6464
Croton lobatus L.	Th	
Diospyros mespiliformis Hochst. ex A.DC.	mPh	Akoègninou 2570
Euphorbia convolvuloides Hochst. ex Benth.	Th	Burg 1471
Euphorbia heterophylla L.	Ch	Assédé 92
Phyllanthus pentandrus Schumach. and Thonn.	nph	Sokpon 1528
Ricinus communis L.	nph	
Eriocaulaceae		
Eriocaulon afzelianum Wikstr. ex Körn.	Hy	
Eriocaulon fulvum N.E.Br.	Hy	
Euphorbiaceae		
Acalypha ceraceopunctata Pax	mph	Houngnon 1532a
Alchornea cordifolia (Schumach. and Thonn) Müll.Arg.	mph	
Bridelia ferruginea Benth.	mph	Assédé 24
Bridelia micrantha (Hochst.) Baill.	mPh	

Table 2. ***Continued.***

SCIENTIFIC NAME	LIFE FORM	VOUCHER SPECIMENS
Bridelia scleroneura Müll.Arg.	mph	Pauwels 8077
Euphorbia hirta L.	Th	Assédé 106
Euphorbia poissonii Pax	nph	
Euphorbia polycnemoides Hochst. ex Boiss.	Th	Akoègninou 5600
Flueggea virosa (Roxb. ex Willd.) Voigt	mph	De Souza 607b
Hymenocardia acida Tul.	mph	Sinsin 695
Margaritaria discoidea (Baill.) Webster	mPh	Assédé 32
Phyllanthus amarus Schumach. and Thonn.	Th	
Phyllanthus muellerianus (O.Ktze.) Exell	Lmph	Sokpon 233
Phyllanthus reticulatus Poir. var. *reticulatus*	Lmph	Assédé 38
Phyllanthus sublanatus Schumach. and Thonn.	Th	Sinsin 863
Sapium grahami (Stapf.) Prain.	Gt	Assédé 55
Sebastiania chamaelae (L.) Müll.Arg.	Ch	
Tragia senegalensis Müll.Arg.	Th	Sinsin 2131
Fabaceae		
Abrus fruticulosus Wall. ex Wight and Arn.	Lnph	Assédé 62
Acacia amythethophylla Steud. ex A.Rich.	mPh	Houngnon 1245a
Acacia ataxacantha DC.	Lmph	Essou 2214
Acacia dudgeonii Craib ex Holland	mph	Essou 2105
Acacia gerrardii Benth.	mPh	de Souza 927a
Acacia gourmaensis A.Chev.	mph	Akoègninou 2766
Acacia hockii De Wild.	mph	Sokpon 260
Acacia macrostachya Reichenb. ex DC.	mph	Adjakidjè 5213
Acacia senegal (L.) Willd.	mph	Houngnon 928a
Acacia seyal Delile var. *seyal*	mph	Sinsin 2580
Acacia sieberiana DC. var. *villosa* A.Chev.	mPh	Maesen 6934
Adenodolichos paniculatus (Hua) Hutch. and Dalziel	Ch	Delvaux 35
Aeschynomene crassicaulis Harms	Hy	Houngnon 4491
Aeschynomene indica L.	mph	Houngnon 1261k
Aeschynomene lateritia Harms	Th	Pauwels 7964
Afzelia africana Smith.	mPh	Sinsin 2513
Aganope stuhlmannii (Taub.) Adema	mPh	Adjakidjè 1857
Albizia adianthifolia (Schumach.) W.F.Wright	mPh	Akoègninou 3820
Albizia chevalieri Harms	mph	Houngnon 1248a
Alysicarpus glumaceus (Vahl) DC.	Ch	Adjakidjè 2470
Alysicarpus ovalifolius (Schumach.) J.Léonard	Th	Houngnon 1660e
Alysicarpus rugosus (Willd.) DC.	Th	Akoègninou 4232
Berlinia grandiflora (Vahl) Hutch. and Dalziel	mPh	Adjakidjè 3371
Bobgunnia madagascariensis Desv.	mph	Essou 2028
Burkea africana Hook.	mPh	Akoègninou 1744
Cajanus kerstingii Harms	Ch	Houngnon 3912
Cajanus scarabaeoides (L.) Thouars var. *scarabaeoides*	Ch	Houngnon 3132
Calopogonium mucunoides Desv.	nph	Kreis 212
Cassia sieberiana DC.	mPh	Essou 2092
Chamaecrista mimosoides (L.) Greene	Ch	De Souza 253b
Chamaecrista rotundifolia (Pers.) Greene	Ch	
Cordyla pinnata (Lepr. ex A.Rich.) Milne-Redh.	mPh	Houngnon 261a
Crotalaria calycina Schrank	Ch	Maesen 7232
Crotalaria cephalotes Steud. ex A.Rich.	Ch	Assédé 71
Crotalaria comosa Baker	Ch	
Crotalaria glauca Willd.	Ch	Pauwels 8171
Crotalaria goreensis Guill. and Perr.	Ch	Assédé 77
Crotalaria graminicola Taub. ex Baker f.	Ch	
Crotalaria hyssopifolia Klotzsch	Ch	Houngnon 7528
Crotalaria lachnophora A.Rich.	Ch	Assédé 93
Crotalaria leprieurii Guill. and Perr.	Ch	Pauwels 8001
Crotalaria macrocalyx Benth.	Ch	Assédé 101
Crotalaria microcarpa Hochst. ex Benth.	Ch	

Table 2. ***Continued.***

SCIENTIFIC NAME	LIFE FORM	VOUCHER SPECIMENS
Crotalaria ononoides Benth.	Ch	Adjakidjè 2243
Crotalaria pallida Aiton var. *pallida*	Ch	Assédé 110
Crotalaria retusa L.	Ch	Akoègninou 6035
Dalbergia melanoxylon Guill. and Perr.	mph	Chevalier 24117
Daniellia oliveri (Rolfe) Hutch. and Dalziel	mPh	Assédé 84
Desmodium gangeticum (L.) DC. var. *maculatum* (L.) Baker	Ch	
Desmodium hirtum Guin. and Perr.	Th	Assédé 79
Desmodium laxiflorum DC.	Ch	Maesen 6927
Desmodium scorpiurus (Desv.) Sw.	LHc	Assédé 89
Desmodium velutinum (Wild.) DC.	nph	Pauwels 8227
Detarium microcarpum Guill. and Perr.	mph	De Souza 268a
Detarium senegalense J.F.Gmel.	mPh	Assédé 108
Dichrostachys cinerea (L.) Wight and Arn.	mph	Essou 2250
Entada africana Guill. and Perr.	mph	Sinsin 1165
Eriosema andohii Milne-Redh.	mph	Sokpon 878
Eriosema glomeratum (Guill. and Perr.) Hook.f. var. *glomeratum*	nph	Maesen 6910
Eriosema griseum Baker var. *togense* (Taub.) Jacq.-Fél.	nph	Akoègninou 4195
Eriosema psoraleoides (Lam.) G.Don	Ch	Houngnon 3524
Eriosema pulcherrimum Taub.	Gr	Sinsin 3118
Erythrina senegalensis DC.	mph	Houinato 568
Erythrophleum africanum (Welw. ex Benth.) Harms	mPh	Houngnon 7773
Indigofera bracteolata DC.	nph	Pauwels 8243
Indigofera dendroides Jacq.	Th	Assédé 94
Indigofera garckeana Vatke	nph	Pauwels 8176
Indigofera geminata Baker	nph	Pauwels 8257
Indigofera hirsuta L. var. *hirsuta*	Th	Adjakidjè 2389
Indigofera leprieurii Baker f.	Th	Houngnon 7712
Indigofera leptoclada Harms	Ch	Houngnon 7696
Indigofera microcarpa Desv.	Th	Sinsin 2602/2603
Indigofera nigricans Vahl ex Pers.	Ch	Sinsin 1275
Indigofera nigritana Hook.f.	Ch	Sinsin 2564,2601
Indigofera paniculata Vahl ex Pers. ssp. *paniculata*	Ch	Pauwels 8118
Indigofera polysphaera Baker.	nph	Houngnon 6247
Indigofera pulchra Willd.	nph	Sinsin 1497
Indigofera stenophylla Guill. and Perr. var. *stenophylla*	Ch	Pauwels 8233
Isoberlinia doka Craib and Stapf.	mPh	Assédé 74
Isoberlinia tomentosa (Harms) Craib and Stapf.	mPh	
Lonchocarpus laxiflora Guill. and Perr.	mPh	Assédé 18
Melliniella micrantha Harms	Th	Houngnon 4086
Microcharis longicalyx (J.B.Gillett) Schrire	Th	Sinsin 1936
Mimosa invisa Mart. var. *invisa*	nph	Assédé 49
Mimosa pigra L.	nph	Houngnon 7709
Parkia biglobosa (Jacq.) R.Br. ex Benth.	mPh	Akoègninou 6204
Pericopsis laxiflora (Benth. ex Baker) Meeuwen	mph	Pauwels 8225
Piliostigma reticulatum (DC.) Hochst.	mph	Adjakidjè 5163
Piliostigma thonningii (Schumach.) Milne-Redh.	mph	Zon 320
Prosopis africana (Guill. and Perr.) Taub.	mPh	Essou 2110
Pterocarpus erinaceus Poir.	mPh	Akoègninou 2012
Pterocarpus santalinoides L'Hér. ex DC.	mPh	Assédé 53
Pueraria phaseoloides (Roxb.) Benth. var. *javanica* (Benth.) Baker	Ch	
Rhynchosia minima (L.) DC. var. *minima*	Hc	Assédé 58
Rhynchosia nyasica Baker	Hc	Akoègninou 6188
Senna alata (L.) Roxb.	mph	Assédé 43
Senna obtusifolia (L.) H.S.Irwin and Barneby	Ch	
Sesbania rostrata Brem. and Oberm.	nph	Sinsin 2578
Stylosanthes erecta Beauv.	Ch	Assédé 60
Stylosanthes fruticosa (Retz.) Alston	Ch	
Tamarindus indica L.	mPh	De Souza 282b

Table 2. ***Continued.***

SCIENTIFIC NAME	LIFE FORM	VOUCHER SPECIMENS
Tephrosia bracteolata Guill. and Perr.	nph	Pauwels 8155
Tephrosia elegans Schumach.	nph	Pauwels 8006
Tephrosia flexuosa G.Don	Th	Pauwels 8194
Tephrosia linearis (Willd.) Pers.	Th	Adjakidjè 5204
Tephrosia mossiensis A.Chev.	Ch	Pauwels 8215
Tephrosia nana Schweinf.	Ch	Sokpon 1124
Tephrosia pedicellata Baker	Ch	Pauwels 8213
Tephrosia platycarpa Guill. and Perr.	Ch	Akoègninou 3435
Tephrosia villosa (L.) Pers. ssp. *ehrenbergiana* (Schweinf.) Brummitt	Ch	Maesen 6562
Teramnus labialis (L.f.) Spreng.	nph	Sinsin 2470
Uraria picta (Jacq.) DC.	Gr	Assédé 25
Vigna pubigera Baker var. *pubigera*	Ch	
Vigna racemosa (G.Don) Hutch. and Dalziel	Ch	Assédé 34
Zornia glochidiata Rchb. ex DC.	Th	
Flacourtiaceae		
Flacourtia indica (Burm.f.) Merr.	mPh	Houngnon 6606
Pentadesma butyracea Sabine	mPh	Assédé 42
Oncoba spinosa Forssk.	mph	Adjakidjè 3388
Flagellariaceae		
Flagellaria guineensis Schumach.	Lnph	Assédé 54
Gentianaceae		
Canscora diffusa (Vahl) R.Br. ex Roem. and Schult.	Th	Akoègninou 2572
Canscora decussata (Roxb.) Roem. and Schult.	Th	Assédé 33
Hyacinthaceae		
Albuca nigritana (Baker) Troupin	Gb	Assédé 26
Drimia altissima (L.f.) Ker-Gawl.	Gt	Sinsin 2387
Drimia indica (Roxb.) J.P.Jessop	Gt	Sinsin 2388
Drimia glaucescens (Engl. and K.Krause) H.Scholz	Gb	Adjakidjè 3518
Hydrophyllaceae		
Hydrolea glabra Schum. and Thonn.	Th	Akoègninou 2567
Hydrolea macrosepala A.W. Benn.	Th	Houngnon 7401
Lamiaceae		
Basilicum polystachyon (L.) Moench	Th	Assédé 28
Becium grandiflorum (Lam.) Picc.-Serm. var. *obovatum* (E.Mey. ex Benth.) Sebald	Hc	Akoègninou 6189
Englerastrum gracillimum Th.C.E.Fries	Th	Adjakidjè 2452
Hoslundia opposita Vahl.	mph	
Hyptis suaveolens (L.) Poit.	Ch	
Leucas martinicensis (Jacq.) R.Br.	Th	Assédé 59
Orthosiphon rubicundus (D.Don) Benth.	Hc	
Platostoma africanum P.Beauv.	Th	Assédé 102
Tinnea barteri Gürke	Ch	Pauwels 8166
Lentibulariaceae		
Utricularia inflexa Forssk.	Hy	Assédé 85
Utricularia rigida Benj.	Hy	Assédé 66
Loganiaceae		
Anthocleista djalonensis A.Chev.	mPh	Assédé 107
Spigelia anthelmia L.	Hy	
Strychnos innocua Delile	mph	Chevalier 24502
Strychnos nigritana Baker.	LmPh	Assédé 67
Strychnos spinosa Lam.	mph	
Loranthaceae		
Agelanthus dodoneifolius (DC.) Polh. and Wiens	Ep	Maesen 6933
Tapinanthus globiferus (A.Rich.) Van Tieghem.	Ep	Chevalier 24308
Tapinanthus ophiodes (Sprague) Danser	Ep	Chevalier 24371
Lythraceae		
Ammannia baccifera L.	Ch	Sinsin 2604
Malpighiaceae		
Acridocarpus spectabilis (Nied.) Doorn-Hoekm.	mph	Houngnon 881a

Table 2. ***Continued.***

SCIENTIFIC NAME	LIFE FORM	VOUCHER SPECIMENS
Malvaceae		
Abutilon mauritianum (Jacq.) Medik.	Ch	Assédé 72
Adansonia digitata L.	mPh	Houngnon 187a
Bombax costatum Pellegr. and Vuillet	mPh	Sokpon 1765
Cienfuegosia heteroclada Sprague	Hc	Maesen 6939
Cola laurifolia Mast.	mPh	Akoègninou 2589
Corchorus aestuans L.	Ch	Assédé 68
Corchorus olitorius L.	Ch	Houngnon 5585
Corchorus tridens L.	Ch	Houngnon 6423
Corchorus trilocularis L.	Ch	Assédé 90
Dombeya quinqueseta (Delile) Exell.	mph	Sinsin 2551
Grewia barteri Burret	mph	De Souza 1837
Grewia cissoides Hutch. and DalzieI	nph	Adjakidjè 3387
Grewia flavescens Juss.	mph	Assédé 1
Grewia lasiodiscus K.Schum.	mph	Houngnon 7428
Grewia mollis Juss.	mph	Grewia mollis
Hibiscus articulatus Hochst. ex A.Rich.	Ch	Assédé 99
Hibiscus asper Hook.f.	Th	Sokpon 1208
Hibiscus congestiflorus Hochr.	Th	Maesen 6926
Hibiscus sidiformis Baill.	Th	Sinsin 3600
Malvastrum coromandelianum (L.) Garcke	Ch	Assédé 65
Sida acuta Burm.f. ssp. *acuta*	Ch	Akoègninou 5159
Sida alba L.	Ch	De Souza 872a
Sida garckeana Pol.	Ch	873a
Sida linifolia Juss. ex Cav.	Ch	Sinsin 2567
Sida rhombifolia L. ssp. *rhombifolia*	Ch	Adjakidjè 2362
Sida urens L.	Hc	Sinsin 2480
Sterculia setigera Delile	mPh	Sinsin 2371
Triumfetta cordifolia A. Rich.	mph	Akoègninou 5945
Triumfetta rhomboidea Jacq.	nph	Akoègninou 3491
Urena lobata L.	Ch	Assédé 40
Waltheria indica L.	nph	Sinsin 2595
Wissadula amplissima (L.) R.E.Fries var. *rostrata* (Schumach. and Thonn.) R.E.Fries	nph	Sinsin 2559
Melastomataceae		
Dissotis irvingiana Hook.	G	
Meliaceae		
Azadirachta indica A.Juss.	mPh	Assédé 36
Ekebergia capensis Sparrm.	mPh	
Khaya senegalensis (Desr.) A.Juss.	mPh	Sinsin 2436
Pseudocedrela kotschyi (Schweinf.) Harms	mPh	Ayichédéhou 1422
Trichilia emetica Vahl.	mPh	Assédé 47
Trichilia retusa Oliv.	mPh	Assédé 12
Mennispermaceae		
Cissampelos mucronata A.Rich.	LCh	De Souza 916a
Molluginaceae		
Mollugo nudicaulis Lam.	Th	Houngnon 4489
Moraceae		
Ficus abutilifolia (Miq.) Miq.	mph	Sinsin 2365
Ficus capreifolia Delile	mph	Assédé 37
Ficus exasperata Vahl	mPh	
Ficus glumosa Delile	mPh	Sinsin 2372
Ficus ingens (Miq.) Miq.	mPh	Sinsin 2670
Ficus sur Forssk.	mPh	Sinsin 2430
Ficus sycomorus L.	mPh	Adjakidjè 3196
Ficus thonningii Blume	mPh	Essou 2066
Ficus trichopoda Baker	mPh	Sokpon 245
Ficus vallis-choudae Delile	mPh	Sinsin 2380
Ficus vogeliana (Miq.) Miq.	mPh	Sokpon 251

Table 2. ***Continued.***

SCIENTIFIC NAME	LIFE FORM	VOUCHER SPECIMENS
Myrtaceae		
Syzygium guineense (Willd.) DC.var. *guineense*	mph	Houngnon 7713
Nyctaginaceae		
Boerhavia diffusa L.	Th	Assédé 46
Boerhavia erecta L.	Th	
Nymphaeaceae		
Nymphaea lotus L.	Hy	Assédé 7
Nymphaea maculata Schumach. and Thonn.	Hy	Sokpon 594
Nymphaea micrantha Guill. and Perr.	Hy	Assédé 4
Olacaceae		
Ximenia americana L.	nph	Akoègninou 2447
Onagraceae		
Ludwigia abyssinica A.Rich.	Th	Assédé 50
Ludwigia decurrens Walt.	Th	
Ludwigia hyssopifolia (G.Don) Exell	Th	Assédé 109
Ludwigia octovalvis (Jacq.) Raven ssp. *brevisepala* (Brenan) Raven	Th	Maesen 7076
Ludwigia senegalensis (De.) Troch.	Th	Maesen 7225
Ophioglossaceae		
Ophioglossum costatum R.Br.	Gr	Assédé 97
Opiliaceae		
Opilia amentacea Roxb.	Lmph	Assédé 76
Orchidaceae		
Nervilia bicarinata (Blume) Schltr.	Gt	Akoègninou 2436
Eulophia guineensis Lindl.	Th	Houngnon 7769
Eulophia leonensis Rolfe	Th	Akoègninou 2465
Passifloraceae		
Passiflora foetida L.	Lnph	Assédé 82
Pedaliaceae		
Ceratotheca sesamoides Endl.	Th	Sinsin 3166
Martynia annua L.	Th	Assédé 52
Sesamum indicum L.	Th	
Poaceae		
Acroceras zizanioides (Kunth) Dandy.	Ch	Houngnon 647b
Alloteropsis paniculata (Benth.) Stapf	Th	Froment 1028
Anadelphia afzeliana (Rendle) Stapf	Hc	Houngnon 1723a
Andropogon canaliculatus Schumach.	Hc	Sinsin 3652
Andropogon chinensis (Nees) Merr.	Hc	Sinsin 3143
Andropogon gayanus Kunth	Hc	Houngnon 4143
Andropogon perligulatus Stapf	Hc	McDonald 384b
Andropogon pseudapricus Stapf	Hc	Houngnon 4706
Andropogon schirensis Hochst. ex A.Rich.	Hc	Pauwels 8240
Andropogon tectorum Schumach. and Thonn.	Hc	Houngnon 4083
Anthephora cristata (Döll) Hack. ex De Wild. and T.Durand	Th	Adjakidjè 656d
Aristida adscensionis L.	Th	Pauwels 7409
Aristida kerstingii Pilger	Th	Delvaux 116
Aristida stipoides Lam.	Hc	Assédé 23
Beckeropsis uniseta (Nees) K.Schum.	Hc	Houngnon 1348a
Bewsia biflora (Rack.) Gooss.	Hc	Adjanohoun 461
Brachiaria deflexa (Schumach.) Robyns	Th	Chevalier 23887
Brachiaria jubata (Fig. and De Not.) Stapf	Hc	Houngnon 1745
Brachiaria lata (Schumach.) C.E.Hubb.	Th	Pauwels 7416
Brachiaria serrata (Thunb.) Stapf	Hc	Sinsin 1133
Cenchrus biflorus Roxb.	Th	Houngnon 42
Chasmopodium caudatum (Rack.) Stapf	Th	Sinsin 2362
Chloris gayana Kunth	Hc	Houngnon 678d
Chloris pilosa Schumach.	Th	Risopoulos 1197
Ctenium canescens Benth.	Hc	Essou 16
Ctenium elegans Kunth	Th	Lejoly 430

Table 2. ***Continued.***

SCIENTIFIC NAME	LIFE FORM	VOUCHER SPECIMENS
Ctenium newtonii Hack.	Hc	Houngnon 685f
Ctenium villosum Herhaut	Th	Sinsin 1284
Cymbopogon giganteus (Hochst.) Chiov.	Hc	De Souza 687a
Dactyloctenium aegyptium (L.) Willd.	Th	Sinsin 1130
Digitaria horizontalis Willd. var. *porrhanta* (Steud.) Henr. ex Hubb. and Vaughan	Th	Sinsin 1123
Digitaria longiflora (Retz.) Pers.	Th	Sinsin 1271
Diheteropogon amplectens (Nees) Clayton var. *catangensis* (Chiov.) Clayton	Hc	Houngnon 6387
Echinochloa colona (L.) Link	Hc	Adakidjè s.n
Echinochloa stagnina (Retz.) P.Beauv.	Hc	Houngnon 695b
Eleusine indica (L.) Gaertn.	Th	Houngnon 696e
Elionurus ciliaris Kunth	Hc	Pauwels 8163
Elionurus elegans Kunth	Th	Akoègninou 3574
Elionurus muticus (Spreng.) Kuntze	Th	Lisowski 0-942
Elytrophorus spicatus (Willd.) A.Camus	Th	Houngnon 4058
Eragrostis amabilis (L.) Wight and Arn. ex Nees	Th	Houinato 250
Eragrostis aspera (Jacq.) Nees	Th	De Souza 702a
Eragrostis atrovirens (Desf.) Trin. ex Steud.	Hc	Pierret 003
Eragrostis cilianensis (Ali.) Lut.	Th	De Souza 703a
Eragrostis gangetica (Roxb.) Steud.	Th	Houngnon 699b
Eragrostis tenella (L.) Roem. and Schult.	Th	Assédé 15
Eragrostis tremula Steud.	Th	Pierret 006
Eragrostis turgida (Schumach.) De Wild.	Th	Sinsin 1158
Euclasta condylotricha (Steud.) Stapf	Th	Houngnon 4065
Heteropogon contortus (L.) P.Beauv.	Hc	Pauwels 7982
Hyparrhenia barteri (Rack.) Stapf	Th	Akoègninou 5543
Hyparrhenia cyanescens (Stapf) Stapf	Hc	Houngnon 1717
Hyparrhenia glabriuscula (A.Rich.) Stapf	Hc	Houngnon 1722b
Hyparrhenia involucrata Stapf var. *involucrata*	Th	Pauwels 8146
Hyparrhenia rufa (Nees) Stapf	Hc	Adjakidjè 2424
Hyparrhenia subplumosa Stapf	Hc	Pauwels 8183
Hyparrhenia welwitschii (Rendle) Stapf	Th	Hougnon 6193
Hyperthelia dissoluta (Nees ex Steud.) W.D.Clayton	Hc	Pauwels 8151
Imperata cylindrica (L.) P.Beauv.	Gr	Houngnon 3545
Leersia hexandra Sw.	Gr	Pauwels 7862
Leptochloa caerulescens Steud.	Th	Houngnon 1277a
Loudetia arundinacea (Hochst. ex A.Rich.) Steud.	Hc	De Souza 718b
Loudetia simplex (Nees) C.E.Hubb.	Hc	De Souza 718a
Loudetia togoensis (Pilg.) C.E.Hubb.	Th	Delvaux 6
Loudetiopsis scaettae (A.Camus) W.D.Clayton	Hc	Risopoulos 1273
Loudetiopsis thoroldii (C.E.Hubb.) Phipps	Hc	McDonald 1501a
Melinis repens (Willd.) Zizka ssp. *repens*	Th	Dumont 10
Melochia corchorifolia L.	Th	Houngnon 6484
Microchloa indica (L.) P.Beauv.	Th	Pauwels 7436
Mnesithea granularis (L.) Koning and Sosef	Th	Sokpon 1253
Monocymbium ceresiiforme (Nees) Stapf	Hc	McDonald 1271b
Oplismenus burmannii (Retz.) P.Beauv.	Th	Sinsin 421
Oplismenus hirtellus (L.) P.Beauv.	Hc	Houinato 578
Oryza barthii A.Chev.	Hc	McDonald 723c
Oryza longistaminata A.Chev. and Roehr.	Hc	Sinsin 3597
Oxytenanthera abyssinica (A.Rich.) Munro	mph	Chevalier 23887
Panicum brevifolium L.	Th	De Souza 726c
Panicum maximum Jacq.	Hc	Pauwels 7557
Panicum pansum Rendle	Th	Houngnon 1136b
Panicum phragmitoides Stapf	Hc	De Souza 725a
Panicum repens L.	Hc	Pauwels 7537
Panicum subalbidum Kunth	Th	Houngnon
Panicum turgidum Forssk.	Hc	Houngnon 1142b
Paspalum conjugatum Berg.	Hc	Adjakidjè 400a

Table 2. ***Continued.***

SCIENTIFIC NAME	LIFE FORM	VOUCHER SPECIMENS
Paspalum scrobiculatum L.	Hc	De Souza 736c
Pennisetum pedicellatum Trin.	Th	Kreis 44
Pennisetum polystachion (L.) Schult. ssp. *polystachion*	Hc	Schmelzer 1012
Phragmites australis (Cav.) Trin. ex Steud.	Hc	Pauwels 7485
Rhytachne triaristata (Steud.) Stapf.	Th	Pauwels 8190
Rottboellia cochinchinensis (Lour.) W.D.Clayton	Th	Houngnon 4144
Sacciolepis cymbiandra Stapf	Hc	McDonald 1505a
Sacciolepis micrococca Mez	Th	McDonald 1506a
Schizachyrium brevifolium (Sw.) Nees var. *brevifolium*	Th	Houngnon 4027
Schizachyrium nodulosum (Rack.) Stapf	Th	Houngnon 4693
Schizachyrium platyphyllum (Franch.) Stapf	Hc	Houngnon 3936
Schizachyrium sanguineum (Retz.) Alston	Hc	Houngnon 673c
Schizachyrium schweinfurthii (Hack.) Stapf	Hc	Houngnon 4058
Schizachyrium urceolatum (Hack.) Stapf	Th	Houngnon 4079
Schoenefeldia gracilis Kunth	Th	Houngnon 1165b
Setaria barbata (Lam.) Kunth	Th	Sinsin 437
Setaria longiseta P.Beauv.	Hc	Houngnon 758c
Setaria pumila (Poir.) Roem. and Schult.	Th	Houngnon 759c
Setaria sphacelata (Schumach.) Stapf and C.E.Hubb.	Hc	Risopoulos 1194
Sorghastrum bipennatum (Hack.) Pilg.	Th	Houngnon 4134
Sporobolus festivus Hochst. ex A.Rich.	Hc	De Souza 761a
Sporobolus pyramidalis P.Beauv.	Hc	Chevalier 23484
Thelepogon elegans Roth ex Roem. and Schult.	Th	Pauwels 8177
Trachypogon spicatus (L.) Kuntze	Hc	Pauwels 8117
Urelytrum annuum Stapf	Th	Lisowski 0-948
Urelytrum muricatum C.E.Hubb.	Hc	Sinsin 1235
Vetiveria fulvibarbis (Trin.) Stapf.	Hc	Assédé 10
Vetiveria nigritana (Benth.) Stapf	Hc	McOonald 766c
Polygalaceae		
Polygala atacorensis Jacq.-Fél.	Th	Sokpon 282
Polygala multiflora Poir	Th	Assédé 64
Securidaca longipedunculata Fresen.	mph	
Pontederiaceae		
Heteranthera callifolia Rchb. ex Kunth	Hy	Sinsin 3602
Eichhornia natans (P.Beauv.) Solms Laub.	Hy	Assédé 51
Portulacaceae		
Portulaca foliosa Ker-Gawl	Th	Sinsin 893
Portulaca grandiflora Hook.	Th	Houngnon 7632
Portulaca oleracea L.	Th	
Proteaceae		
Protea madiensis Oliv. ssp. *madiensis*	mph	Essou 2240
Pteridaceae		
Pellaea doniana J.Sm. ex Hook.	nph	Sinsin 2850
Adiantum lunulatum Burm.f.	Ch	Sokpon 225
Rhamnaceae		
Ziziphus abyssinica A.Rich.	mph	Sokpon 274
Ziziphus mauritiana Lam.	mph	Assédé 2
Ziziphus mucronata Willd.	mph	Essou 2949
Rubiaceae		
Breonadia salicina (Vahl) Hepper and J.R.I.Wood	mPh	Burg 1476
Clausena anisata (Willd.) Hook.f. ex Benth.	mph	
Crossopteryx febrifuga (G. Don) Benth.	mph	Assédé 56
Diodia sarmentosa SW.	Th	Assédé 61
Fadogia agrestis Schweinf. ex Hiern	Ch	Sinsin 2472
Fadogia cienkowskii Schweinf. var. *cienkowskii*	nph	Sokpon 2202
Fadogia erythrophloea (K.Schum. and K.Krause) Hutch. and Dalziel	mph	Sinsin 2370
Feretia apodanthera Delile ssp. *apodanthera*	nph	Houngnon 7693
Gardenia aqualla Stapf and Hutch.	mph	Akoègninou 2749

Table 2. ***Continued.***

SCIENTIFIC NAME	LIFE FORM	VOUCHER SPECIMENS
Gardenia erubescens Stapf and Hutch.	nph	Houngnon 6579
Gardenia sokotensis Hutch.	mph	Sokpon 263
Gardenia ternifolia Schumach. and Thonn. ssp. *ternifolia*	nph	Sinsin 2404
Hymenodictyon floribundum (Steud. and Hochst.) B.L.Rob.	mph	Burg 1455
Ixora brachypoda DC.	mPh	Akoègninou 2455
Keetia cornelia (Cham. and Schltdl.) Bridson	Lmph	Essou 2098
Keetia venosa (Oliv.) Bridson	mph	Hougnon 7500
Kohautia tenuis (Bowdich) Mabb.	Th	Lisowski 0-850
Macrosphyra longistyla (DC.) Hiern	mph	Houngnon 7779
Mitracarpus hirtus (L.) DC.	Th	Houngnon 6419
Mitragyna inermis (Willd.) Kuntze	mph	Pauwels 7421
Morelia senegalensis A.Rich. ex DC.	mph	Sinsin 2706
Mussaenda elegans Schumach. and Thonn.	mph	Sokpon 265
Oldenlandia corymbosa L.	Th	Houngnon 6064
Oldenlandia herbacea (L.) Roxb. var. *herbacea*	Th	Houngnon 7322
Pavetta crassipes K.Schum.	mph	Burg 1408
Rytigynia senegalensis Blume	Lmph	Sinsin 3671
Sarcocephalus latifolius (Sm.) E.A.Bruce	mph	Sinsin 2463
Spermacoce filifolia (Schumach. and Thonn.) J.-P. Lebrun and Stork	Th	Akoègninou 2763
Spermacoce octodon (Hepper) J.-P. Lebrun and Stork	Th	Sinsin 3145
Spermacoce radiata (DC.) Hiern.	Th	Akoègninou 3517
Spermacoce stachydea DC. var. *stachydea*	Th	Houngnon 6203
Tricalysia okelensis Hiern var. *okelensis*	mph	Pierret 15
Sapindaceae		
Allophylus africanus P.Beauv.	mph	Houngnon 4037
Allophylus spicatus (Poir.) Radlk.	mph	Sokpon 237
Eriocoelum kerstingii Gilg ex Engl.	mPh	Houngnon 4428
Paullinia pinnata L.	Lmph	Pauwels 8140
Sapotaceae		
Vitellaria paradoxa C.F.Gaertn. ssp. *paradoxa*	mPh	Akoègninou 4560
Scrophulariaceae		
Cycnium adoense E.Meyer ex Benth. ssp. *camporum* (Engl.) O.J.Hansen	Th	Akoègninou 2571
Scoparia dulcis L.	Th	Sinsin 850
Sopubia simplex (Hochst.) Hochst.	Hc	Lisowski 0-625a
Striga asiatica (L.) Kuntze	Th	Sinsin 1559
Striga hermonthica (Delile) Benth.	Th	Adjakidjè 2471
Simaroubaceae		
Hannoa undulata Planch.	mPh	Houngnon 3583
Smilacaceae		
Smilax anceps Willd.	LGr	Pauwels 7889
Solanaceae		
Physalis angulata L.	Th	Lisowski D-908
Schwenckia americana L.	Th	Sokpon 1527
Sphenocleaceae		
Sphenoclea zeylanica Gaertn.	Th	Eijnatten 2297
Taccaceae		
Tacca leontopetaloides (L.) O.Kuntze.	Gt	Pauwels 8115
Thymelaeaceae		
Gnidia kraussiana Meisn.	LHc	De Souza 1866b
Ulmaceae		
Trema orientalis (L.) Blume	mPh	Akoègninou 6055
Verbenaceae		
Clerodendrum capitatum (Willd.) Schumach. and Thonn.	nph	Lisowski 0-929
Lantana ukambensis (Vatke) Verdc.	Ch	Pauwels 8086
Lippia chevalieri Moldenke	nph	Zon 301
Vitex chrysocarpa Planch. ex Benth.	mph	Houngnon 6550
Vitex doniana Sweet	mPh	Akoègninou 2651
Vitex madiensis Oliv. ssp. *madiensis*	mph	Sinsin 817

Table 2. *Continued.*

SCIENTIFIC NAME	LIFE FORM	VOUCHER SPECIMENS
Violaceae		
Hybanthus enneaspermus (L.) F.Muell. var. *enneaspermus*	Hc	Lisowski 0-666
Vitaceae		
Ampelocissus bombycina (Baker) Planch.	LmPh	Assédé 3
Ampelocissus grantii (Baker) Planch.	Lmph	Sinsin 3582
Ampelocissus leonensis (Hook.f.) Planch.	LmPh	Houngnon 4495
Ampelocissus pentaphylla (Guill. and Perr.) Gilg and Brandt	LmPh	Houngnon 4426
Cayratia debilis (Baker) Suess.	Th	Akoègninou 1689
Cayratia gracilis (Guill. and Perr.) Suess.	LTh	Houngnon 4054
Cayratia ibuensis (Hook.f.) Suess.	Lnph	Adjakidjè 2561
Cissus aralioides (Welw. ex Baker) Planch.	Lnph	Pauwels 8110
Cissus cornifolia (Baker) Planch.	Ch	Houngnon 60a
Cissus kouandeensis A.Chev.	Lnph	Houngnon 65a
Cissus palmatifida (Baker) Planch.	Lnph	Houngnon 4499
Cissus populnea Guill. and Perr.	LmPh	Houngnon 68d
Cissus quadrangularis L.	Lnph	Essou 2225
Cissus rufescens Guill. and Perr.	Lmph	Akoègninou 2903
Cissus vogelii Hook.f.	LHc	Akoègninou 2903
Cyphostemma adenocaule (Steud.) Desc.	Gr	Pauwels 8073
Cyphostemma jatrophoides (Welw. ex Baker) Desc.	Hc	Sinsin 2586
Cyphostemma sokodense (Gilg and Brandt) Desc.	Gr	Houngnon 1046
Zingiberaceae		
Aframomum angustifolium (Sonn). K.Schum.	Gr	Chevalier 24210
Costus afer Ker Gawl.	Gr	Chevalier 23765
Costus spectabilis (Fenzl) K.Schum.	Gb	Burg 1443
Siphonochilus aethiopicus (Schumach.) B.L.Burtt.	Gr	Chevalier 23902
Zygophyllaceae		
Balanites aegyptiaca (L.) Delile.	mph	Sinsin 2575

Table 3. Comparison of Biosphere Reserve of Pendjari components: Jaccard index. Cntr.occ.zone = Control occupation zone

	Core zone	Hunting zone	Cntr. occ. zone
Core zone		0.79	0.51
Hunting zone			0.76

Acknowledgments: We are grateful to the project BIOTA-West III and CUD (Belgian local scholarship) for financial support. We thank farmers around the Biosphere Reserve of Pendjari for their great collaboration.

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Received: December 2011
Accepted: July 2012
Published online: August 2012
Editorial responsibility: Marco Schmidt